Fact Sheet #1

An Introduction to Innovative Stormwater Technology Use in Massachusetts

November 2002

*The **Introductory Fact Sheet** is one in a series of fact sheets for stormwater technologies and related performance evaluations, which are undertaken by the **Massachusetts STrategic Envirotechnology Partnership (STEP).** Technology performance demonstrations reviewed by STEP and found to be consistent with the "Stormwater Best Management Practices Demonstration Tier II Protocol" will be equivalent to demonstrations overseen by STEP.*

This fact sheet introduces stormwater issues, the Massachusetts state and local programs for managing stormwater, and the stormwater technology verification program, which provides information to communities on alternate control methods for managing stormwater and minimizing impacts.

Controlling Stormwater

Pollution from stormwater is a threat to public health and the environment, and is a leading cause of degraded waterbodies in Massachusetts. Rain and snow carry pollutants, such as bacteria and viruses, oil, sediment, fertilizer, and metal particles over land and into wetlands, lakes, streams, rivers and the ocean. When waterbodies are polluted, a community's use of those waters for drinking, fishing, and recreation is diminished, and the waterbodies lose their ability to support a healthy population of plants and animals.

Capturing and treating stormwater effectively can be difficult because rain and snowstorms are erratic in nature and runoff pollutants are variable. Massachusetts communities are routinely tackling the problem of controlling stormwater runoff with detention ponds, swales, infiltration basins, sediment traps, sand filters, and water quality inlets to minimize water pollution and floods in downstream areas. Today, newer types of manufactured stormwater control technologies are becoming widely available, giving communities more ways to deal with stormwater pollutants. Innovative technologies are promising alternatives for improving the quality of stormwater runoff, and they may be particularly useful in urban and developed areas where land is limited for conventional stormwater systems.

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When treatment technologies are new, however, there is little information on their effectiveness or costs associated with their operation and maintenance. Although Massachusetts environmental agencies encourage the use of innovative stormwater systems by reducing regulatory barriers which limit their use, communities often need information and guidance on the appropriate applications for stormwater technologies. Effective stormwater controls often include a combination of traditional and innovative technologies with pollution prevention practices, where good housekeeping practices and source controls reduce pollutants before they are transported in stormwater. Users need to be aware of innovative technologies and the technology assessments that are being done to validate a technology's effectiveness. Knowing how to access and use technology verifications, which are based on representative and quality controlled data, can save time and result in better decisions.

This fact sheet series makes it easier to find useful information relating to the technologies verified in Massachusetts. Fact sheets can be a desk reference for decision-makers that are called upon to consider, approve, or select stormwater system designs. The fact sheets in this series outline the Massachusetts stormwater verification program and describe each of the verified technologies.

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Massachusetts Stormwater Control Programs

Stormwater issues are being addressed by a variety of programs and a wide array of people in Massachusetts. Since 1996, conservation commissions have been evaluating stormwater quality and quantity controls for compliance with the Stormwater Management Policy, under the Wetlands Protection Act. Commissions have authority to review and approve stormwater management systems for new and redevelopment projects that discharge stormwater to wetland resource areas.

As of March 2003, municipalities also are being required by the U.S. Environmental Protection Agency to develop stormwater management plans to comply with National Pollutant Discharge Elimination System (NPDES) Phase I (all municipal vehicle maintenance facilities) and NPDES Phase II (most cities and towns).

Watershed groups and other organizations also are working with federal, state, and local agencies under the Total Maximum Daily Load (TMDL) provisions in the federal Clean Water Act to restore and protect waterbodies that do not meet water quality standards. Stormwater is frequently identified as a significant contributor to waterbody impairment in TMDLs and is targeted for control. Among the types of management options for stormwater are source controls and good housekeeping practices, conventional best management practices, and innovative stormwater technologies. Funding programs, such as federal and state Clean Water Act section 319 grants, also support best management practices that eliminate and reduce stormwater pollution effectively.

STEP Verification of Stormwater Control Systems

In Massachusetts, the Strategic Envirotechnology Partnership (STEP), a collaborative program between the Executive Office of Environmental Affairs and the University of Massachusetts, verifies stormwater technology performance. STEP coordinates the review of technology data, information, and verification report drafts among state agencies' staff at the Department of Environmental Protection, Coastal Zone Management Agency, and the Massachusetts Highway Department.

When a technology has been evaluated by STEP and performance claims have been verified, conservation commissions shall presume that the stormwater technology will function within the parameters verified, provided the conditions for its planned use are similar to those in the verification study. STEP verifications and summary fact sheets are accessible on the STEP Website: http://www.stepsite.org/progress/reports.

STEP Verification vs. Regulatory Approval

STEP provides assistance to developers of innovative technologies. STEP verification of stormwater treatment systems is not required to receive necessary approvals from conservation commissions or the Department of Environmental Protection (DEP). However, if a system has received verfication, a conservation commission shall presume that the technology will function as proposed, provided the conditions are similar to those in which performance was verified. STEP reports are not technology approvals, and do not constitute an endorsement or recommendation for use. Questions on stormwater regulatory issues should be referred to the DEP regional offices.

Massachusetts environmental agencies also collaborate with other states in the Technology Acceptance and Reciprocity Partnership (TARP) by sharing information relating to stormwater technologies and verifications. Participating TARP states use a common protocol to ensure that technology performance evaluations are based on scientifically credible and defensible information and data. The Partnership makes information accessible, eliminates duplication, and improves environmental results. Demonstrations following the protocol and results reviewed in Massachusetts will be treated as if STEP had overseen the demonstration.

Exchanging information with the Environmental Technology Verification (ETV) Program also will allow STEP to streamline its technology reviews and bring commercial stormwater technologies to users more quickly. ETV is a private-public partnership for testing environmental technologies. The US Environmental Protection Agency and NSF International have partnered in the ETV Water Quality Protection Center to develop testing protocols and verify the performance of commercial-ready technologies that protect ground and surface waters from contamination.

Websites For More Information

STEP : www.state.ma.us/envir/pollution/step.htm
TARP : www.dep.state.pa.us/dep/deputate/pollprev/techservices/tarp
EPA: www.epa.gov; *ETV:* www.epa.gov/etv
DEP: www.state.ma.us/dep/brp/stormwtr/stormpub.htm